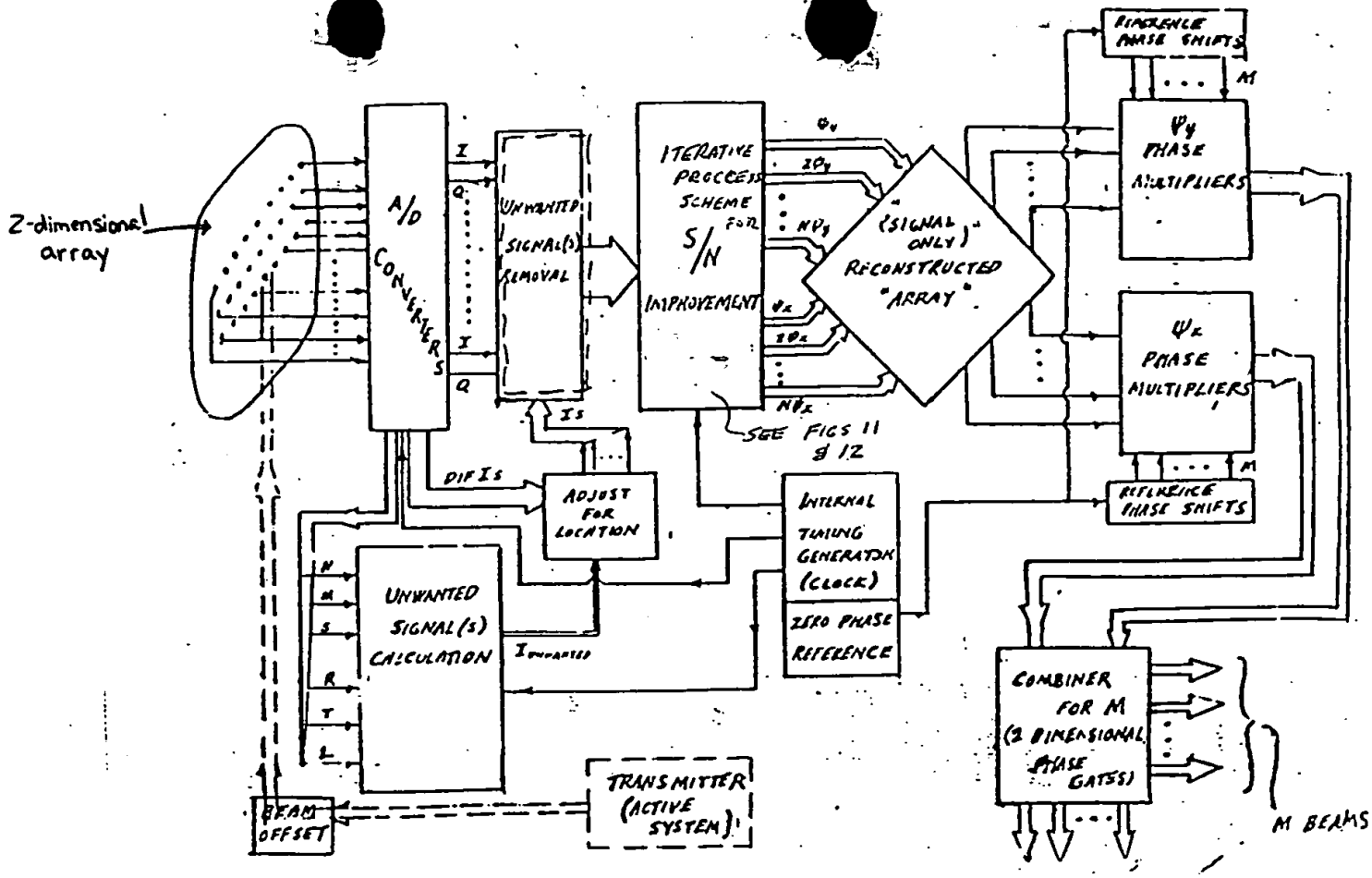


FIG 1 COMPREHENSIVE SYSTEM

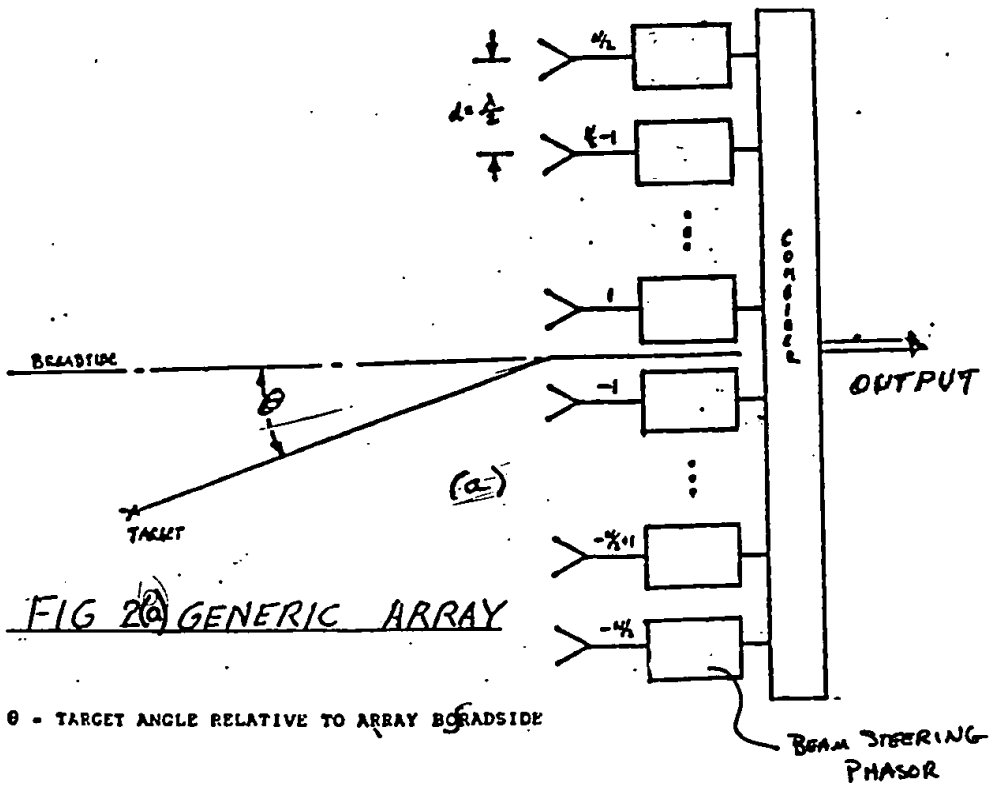


FIG 2(a) GENERIC ARRAY

θ = TARGET ANGLE RELATIVE TO ARRAY BROADSIDE

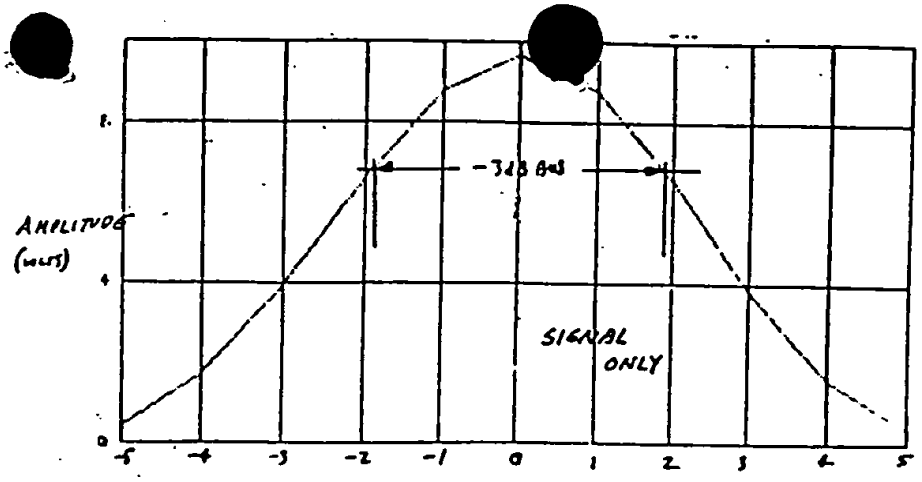


FIG 2 (b) Target Angle Off Peak (2ψ) Degrees

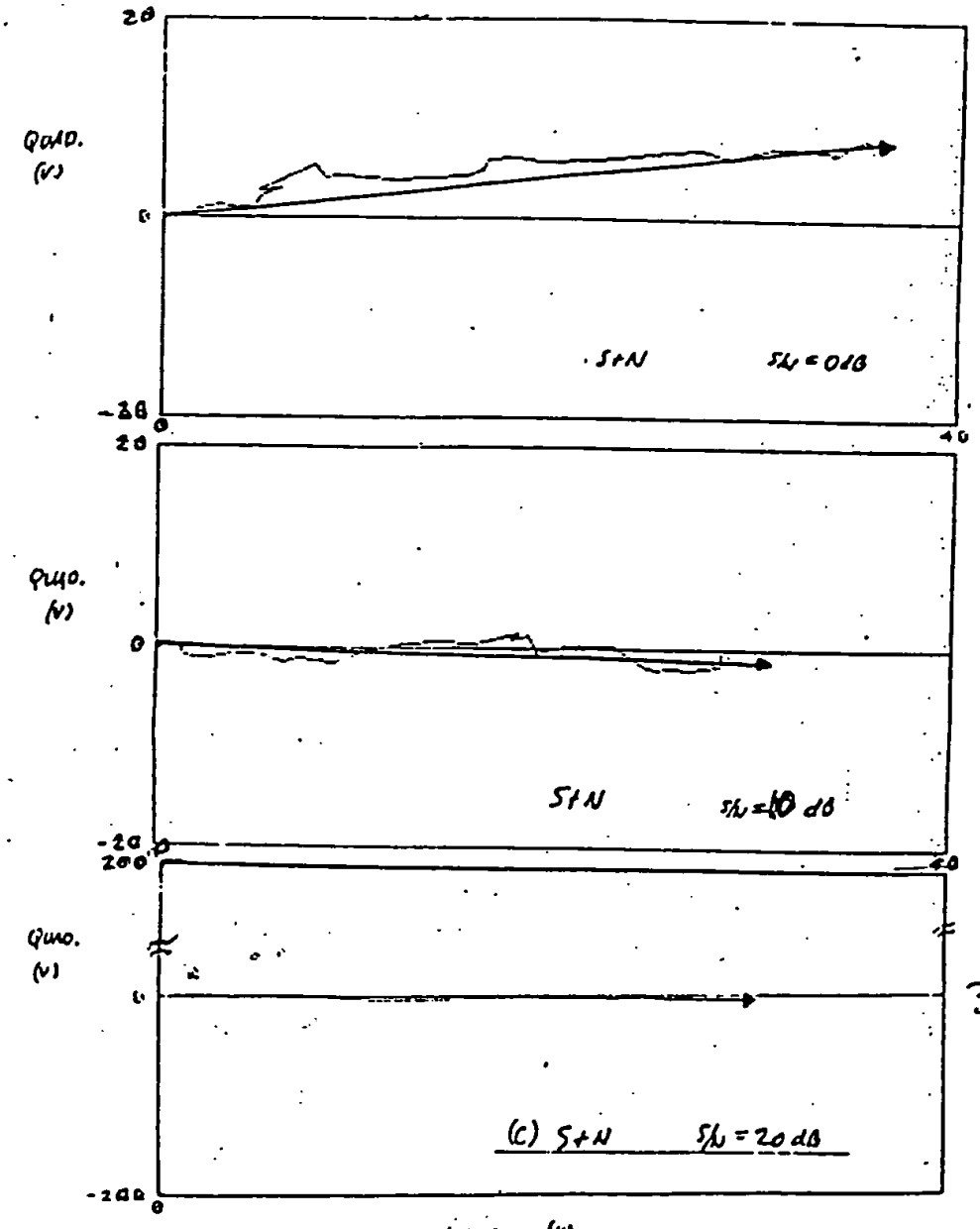
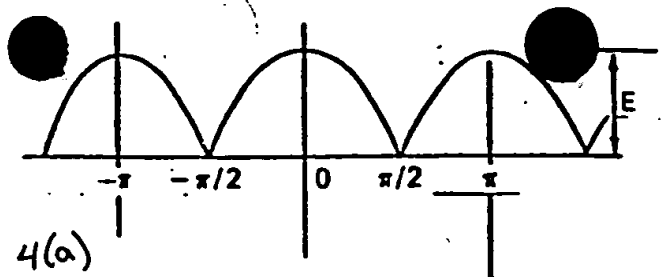
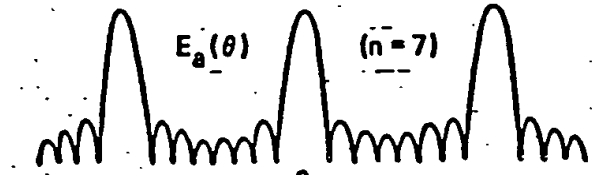


FIG 3 VECTOR RELATIONSHIPS



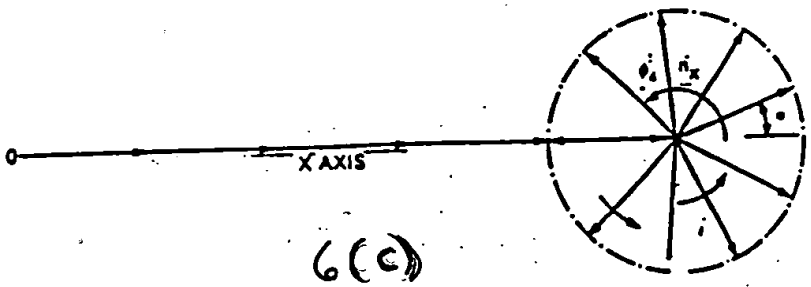
4(a)



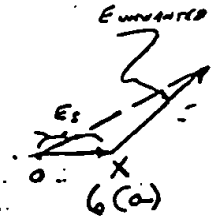
4(b)

$$E_a(\theta) = \frac{\sin n\frac{\pi}{2} g \sin\theta}{n\frac{\pi}{2} g \sin\theta}$$

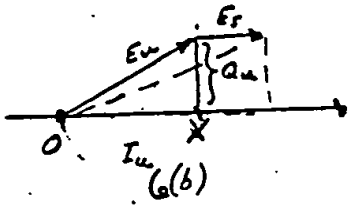
FIG 4. ARRAY FACTORS



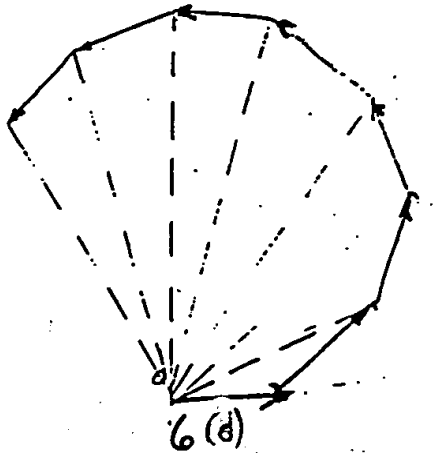
6(c)



6(a)



6(b)



6(d)

FIG 6 MANIFESTATIONS OF NOISE

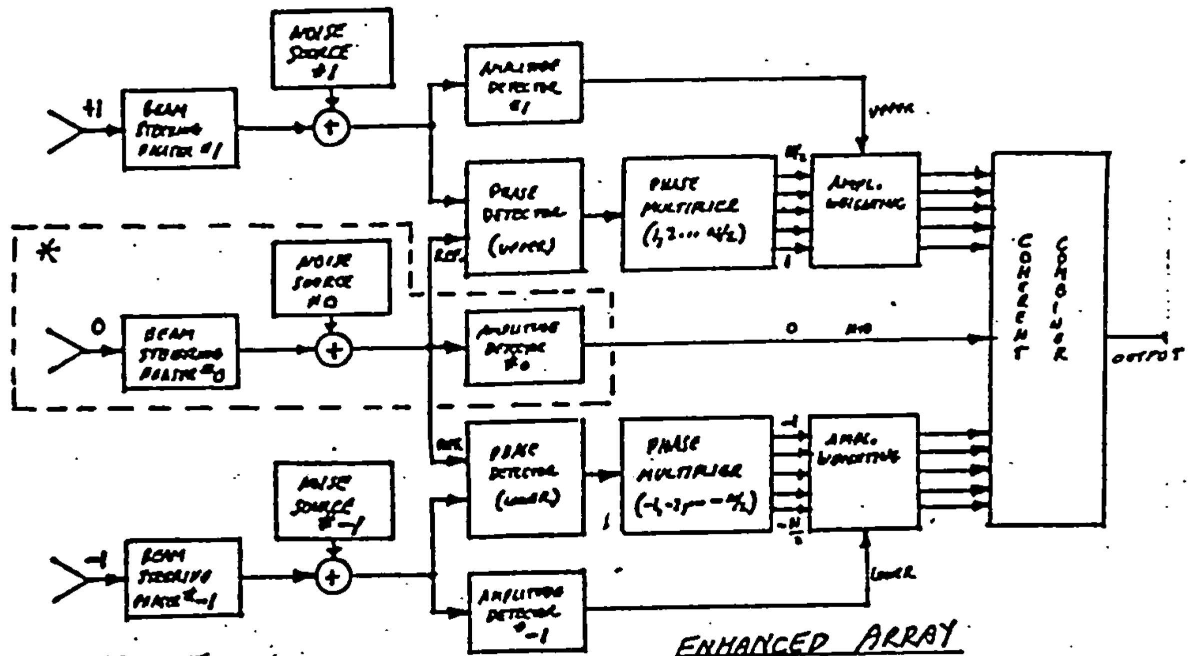


FIG 5

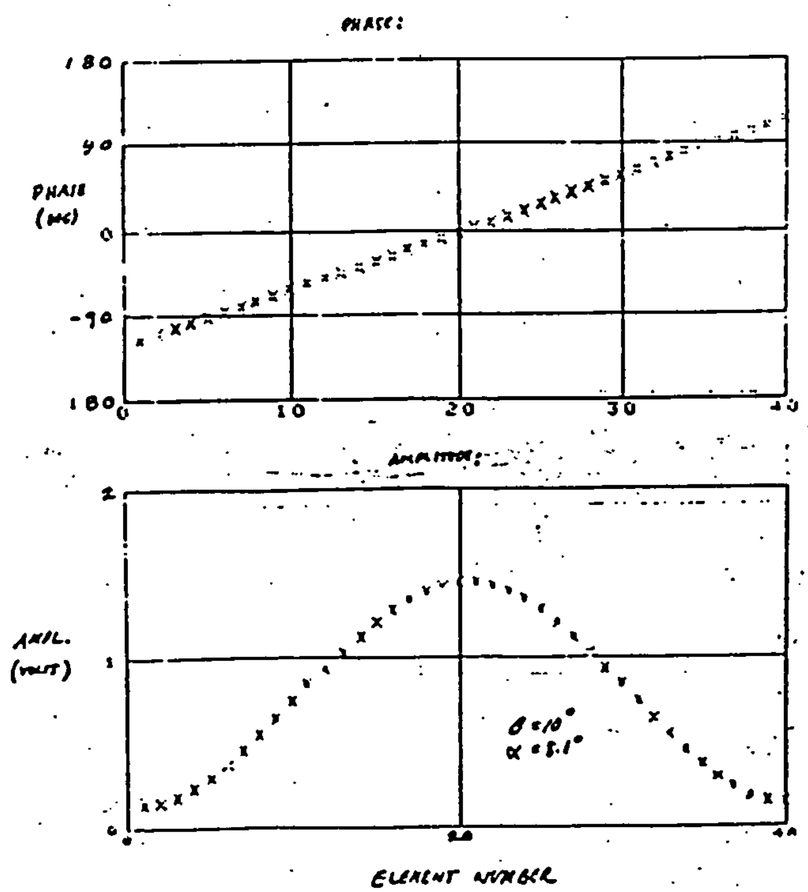


FIG 7 RESPONSE WITHOUT NOISE

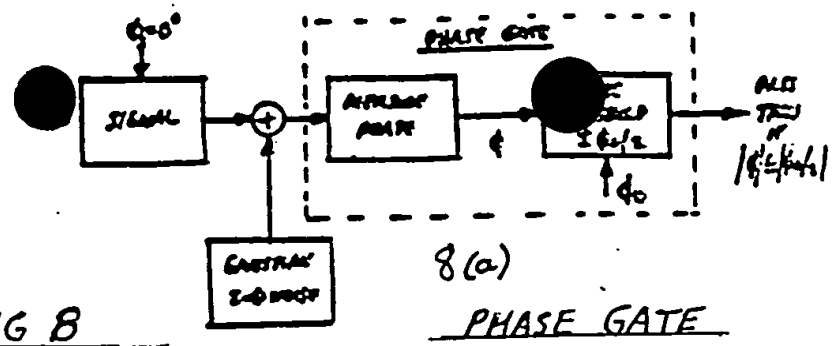
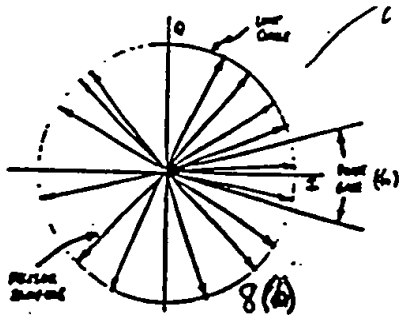
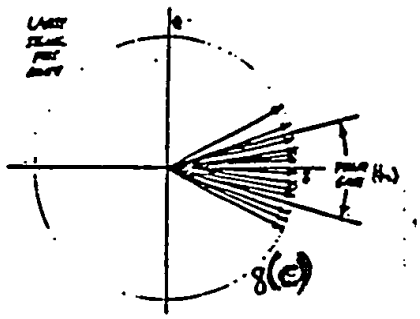
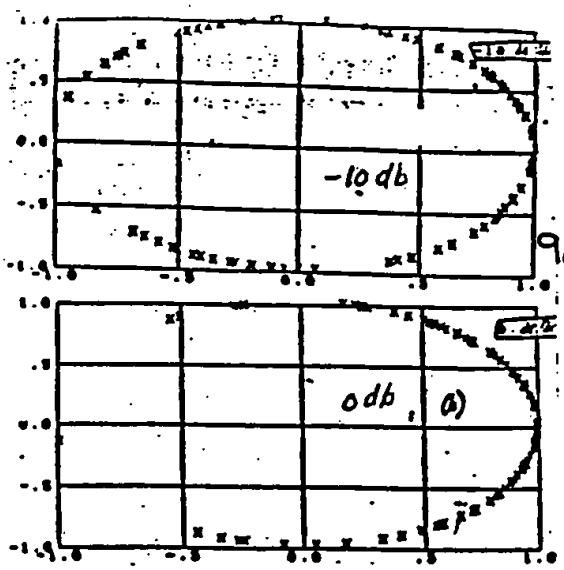
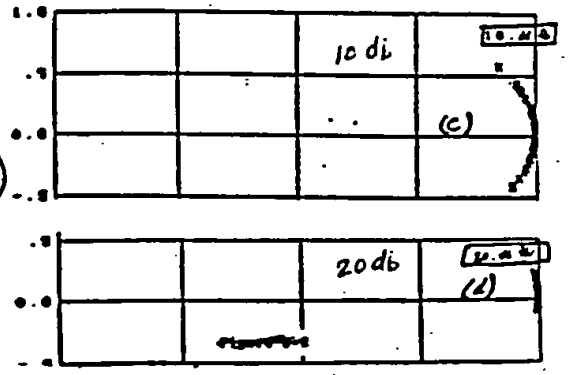


FIG 8 PHASE GATE

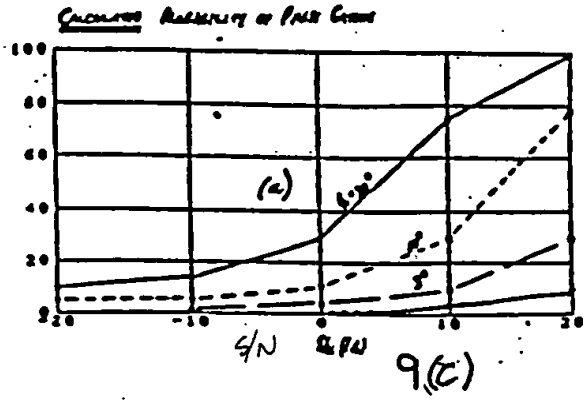




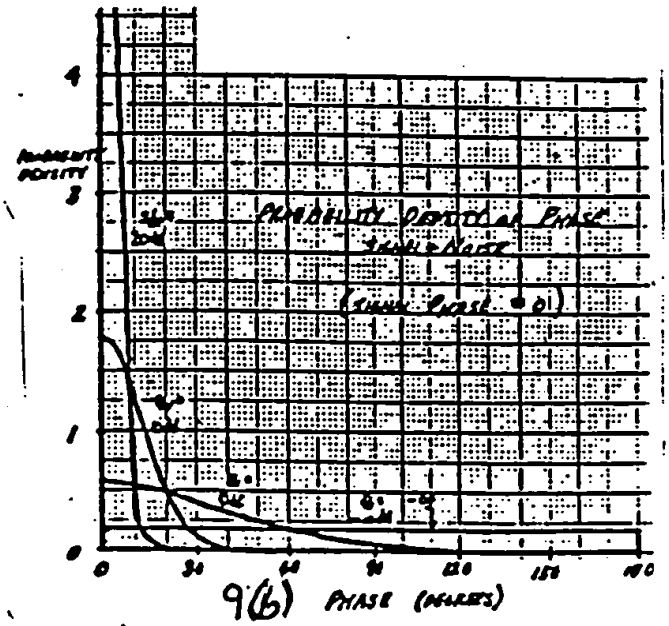




9(a)



9(c)



9(b) PHASE (DEGREES)

FIG 9 PERFORMANCE WITH NOISE

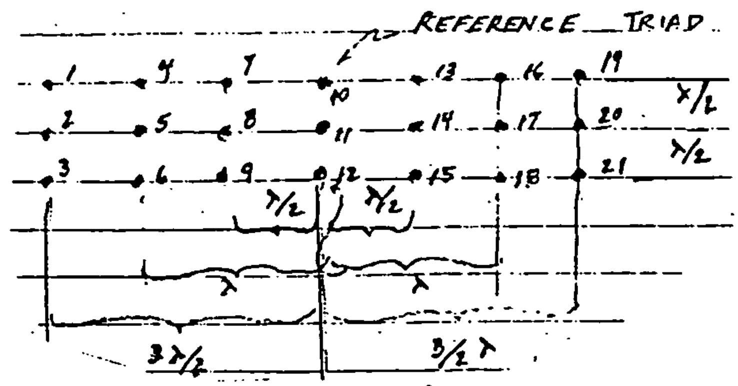


FIG. 10(a)

7X3 ARRAY USED IN SIMULATION

============== 0 dB ============ Trial 16 ============ I data ============

Contents of original I array

0.7349	1.3760	1.1123	1.4339	1.0919	0.7478	0.8836	0.3856	1.7902	*LEFT*
1.7061	2.3004	2.3358							*CENTER*
0.5273	1.9065	2.2319	0.4199	-0.5505	2.2936	2.1521	0.3127	1.2718	*RIGHT*

After signs of right I elements reversed:

———————— I values ————————

1	0.7349	4	1.4339	7	0.8836	10	1.7061	13	-0.5273	16	-0.4199	19	-2.152
2	1.3760	5	1.0919	8	0.3856	11	2.3004	14	-1.9065	17	0.5505	20	-0.312
3	1.1123	6	0.7478	9	1.7902	12	2.3358	15	-2.2319	18	-2.2936	21	-1.271
Sum	3.2232		3.2737		3.0593		6.3422		-4.6657		-2.1629		-3.736
Avg	1.0744		1.0912		1.0198		2.1141		-1.5552		-0.7210		-1.245

FIG. 10(b)

========== 0 dB ========== Trial 17 Group 2 ========== Q data ==========

Avg Q for sextet (w/ signs reversed) = 0.4769 ### Actual noise avg = -0.2302 ###

Sextet QA's

	Q	QA
4	0.0209	-0.4560
5	0.3602	-0.1167 *
6	0.7111	0.2342
16	0.0031	-0.4738
17	-0.2578	-0.7347
18	2.0240	1.5471

FIG 11(a)

Left	Right	Pair Avg(A)	B		Q'A (C)	Delta(D)	Delta A(E)	Col 1	Col 2	Col 3
4	16	0.0089	0.0120	b	-0.4649	0.0031	-0.5867	-0.1217		
4	17	0.1394	-0.1185		-0.5954	-0.2578	-0.8476		-0.2522	
4	18	-1.0016	1.0225		0.5455	2.0240	1.4342			0.8882
5	16	0.1786	0.1817	b	-0.2953	0.0031	-0.5867	-0.2914		
5	17	0.3090	0.0512		-0.4257	-0.2578	-0.8476		-0.4218	
5	18	-0.8319	1.1921		0.7152	2.0240	1.4342			0.7191
6	16	0.3540	0.3571	*	-0.1198	0.0031	-0.5867	-0.4668		
6	17	0.4844	0.2267		-0.2503	-0.2578	-0.8476		-0.5973	
6	18	-0.6565	1.3676	#	0.8906	2.0240	1.4342			0.5436
	Sum =	-1.0157	4.2923		-0.0000	5.3079	0.0000	-0.8800	-1.2714	2.1514
	Avg =	-0.1129	0.4769		-0.0000	0.5898	0.0000	-0.2933	-0.4238	0.7171

Dispersion = 2.393 : 1 Comparison value = -0.2933

Dispersion sum = -0.4131
Dispersion dif = -0.1697
Dispersion ratio = 0.1369 --> divided by 3 = 0.0456

(Inherently indicated by bb or BB in non key entries)
All same polarity, ∴ averageable; low dispersion ratio
Case 1 average below threshold
Case 2 average above threshold
? Average between .73 to .83
Comparison value is average

(Expected A1)
Process A1 POLARITY of noise is: -

========== 0 dB ========== Trial 2 Group 3 ========== Q data ==========

Avg Q for sextet (w/ signs reversed) = 0.1035 ### Actual noise avg = -0.2625 ###

Sextet QA's

	Q	QA
7	1.3410	1.2375
8	1.0595	0.9560
9	-0.6877	-0.7912
13	-1.7936	-1.8971
14	-0.5530	-0.6565 *
15	1.2550	1.1515

FIG 11 (b)

Left	Right	Pair Avg(A)	B		Q'A (C)	Delta(D)	Delta A(E)	Col 1	Col 2	Col 3
7	13	1.5673	-0.2263		-0.3298	-1.7936	-1.4297			-1.0999
7	14	0.9470	0.3940	b	0.2905	-0.5530	-0.1891	-0.4796		
7	15	0.0430	1.2980		1.1945	1.2550	1.6189		0.4244	
8	13	1.4266	-0.3671		-0.4706	-1.7936	-1.4297			-0.9592
8	14	0.8063	0.2533	*	0.1497	-0.5530	-0.1891	-0.3389		
8	15	-0.0977	1.1573		1.0537	1.2550	1.6189		0.5651	
9	13	0.5530	-1.2407	#	-1.3442	-1.7936	-1.4297			-0.0856
9	14	-0.0673	-0.6204	B	-0.7239	-0.5530	-0.1891	0.5348		
9	15	-0.9713	0.2837		0.1801	1.2550	1.6189		1.4388	
	Sum =	4.2066	0.9318		0.0000	-3.2748	0.0000	-0.2837	2.4283	-2.1446
	Avg =	0.4674	0.1035		0.0000	-0.3639	0.0000		0.8094	-0.7149

Dispersion = -1.115 : 1 Comparison value = -0.2837

Dispersion sum = 0.0552
Dispersion dif = 1.0144
Dispersion ratio = 0.0544

(Inherently Bb combination)
One odd polarity, ∴ use sum; dispersion ratio low
Case 1 Σ less than threshold
Case 2 presence of sizable B

sizable = > 67% of # in IA´ column, where # is maximum value of polarity opposite to * polarity

(Expected B1)
Process B1 POLARITY of noise is -

========== 0 dB ========== Trial 1 Group 3 ========== Q data ==========

Avg Q for sextet (w/ signs reversed) = 1.1320 ### Actual noise avg = 0.7660 ###

FIG 11 (c)

	Sextet QA's Q	QA
7	1.6680	0.5360
8	0.2348	-0.8972
9	0.6360	-0.4960
13	2.2163	1.0843
14	0.8563	-0.2757
15	1.1806	0.0486 *

Left	Right	Pair Avg(A)	B		Q'A (C)	Delta(D)	Delta A(E)	Col 1	Col 2	Col 3
7	13	-0.2742	1.9422	b	0.8101	2.2163	0.7986	-0.0116		
7	14	0.4059	1.2622		0.1301	0.8563	-0.5614		-0.6916	
7	15	0.2437	1.4243		0.2923	1.1806	-0.2371			-0.5294
8	13	-0.9908	1.2256	*	0.0935	2.2163	0.7986	0.7050		
8	14	-0.3108	0.5456	#	-0.5865	0.8563	-0.5614		0.0250	
8	15	-0.4729	0.7077		-0.4243	1.1806	-0.2371			0.1872
9	13	-0.7901	1.4262	b	0.2941	2.2163	0.7986	0.5044		
9	14	-0.1102	0.7462		-0.3859	0.8563	-0.5614		-0.1756	
9	15	-0.2723	0.9083		-0.2237	1.1806	-0.2371			-0.0134
Sum =		-2.5716	10.1880		-0.0000	12.7596	0.0000	1.1979	-0.8421	-0.3557
Avg =		-0.2857	1.1320		-0.0000	1.4177	0.0000			

Dispersion = -43.547 : 1 Comparison value = 0.7050

Dispersion sum = 0.4928
Dispersion dif = 0.5160
Dispersion ratio = 0.9551

(Inherently bb or BB)
Use key or * entry; high dispersion ratio
Case 1 less than .73
Case 2 greater than .83
Comparison value is * index entry

(Expected C1)
Process C1 POLARITY of noise is: +

========== 0 dB ========== Trial 4 Group 1 ========== Q data ==========

Avg Q for sextet (w/ signs reversed) = 1.1629 ### Actual noise avg = 0.1628 ###

FIG 11 (d)

	Sextet QA's Q	QA
1	2.6625	1.4997
2	1.9091	0.7462
3	1.0166	-0.1463 *
19	1.9264	0.7635
20	0.1684	-0.9945
21	-0.7059	-1.8688

Left	Right	Pair Avg(A)	B		Q'A (C)	Delta(D)	Delta A(E)	Col 1	Col 2	Col 3
1	19	0.3681	2.2945	#	1.1316	1.9264	1.4634			0.3318
1	20	1.2471	1.4155	B	0.2526	0.1684	-0.2946	X -0.5472		
1	21	1.6842	0.9783		-0.1846	-0.7059	-1.1689		-0.9843	
2	19	-0.0086	1.9178		0.7549	1.9264	1.4634			0.7085
2	20	0.8704	1.0388	*	-0.1241	0.1684	-0.2946	-0.1705		
2	21	1.3075	0.6016		-0.5613	-0.7059	-1.1689		-0.6076	
3	19	-0.4549	1.4715		0.3086	1.9264	1.4634			1.1548
3	20	0.4241	0.5925	b	-0.5704	0.1684	-0.2946	0.2758		
3	21	0.8613	0.1554		-1.0075	-0.7059	-1.1689		-0.1614	
Sum =		6.2990	10.4657		-0.0000	4.1667	0.0000	-0.4418	-1.7533	2.1952
Avg =		0.6999	1.1629		-0.0000	0.4630	0.0000		-0.5844	0.7317

Dispersion = -1.984 : 1 Comparison value = 0.1053

Dispersion sum = -0.2714
Dispersion dif = -0.8230
Dispersion ratio = 0.3298

(Inherently bB) high dispersion ratio
Eliminate B when Σ < abs [1.3]:
Eliminate (b) when Σ >[1.3]
Case 1 less than .73
Case 2 greater than .83

(Expected D1)
Process D1 POLARITY of noise is: +

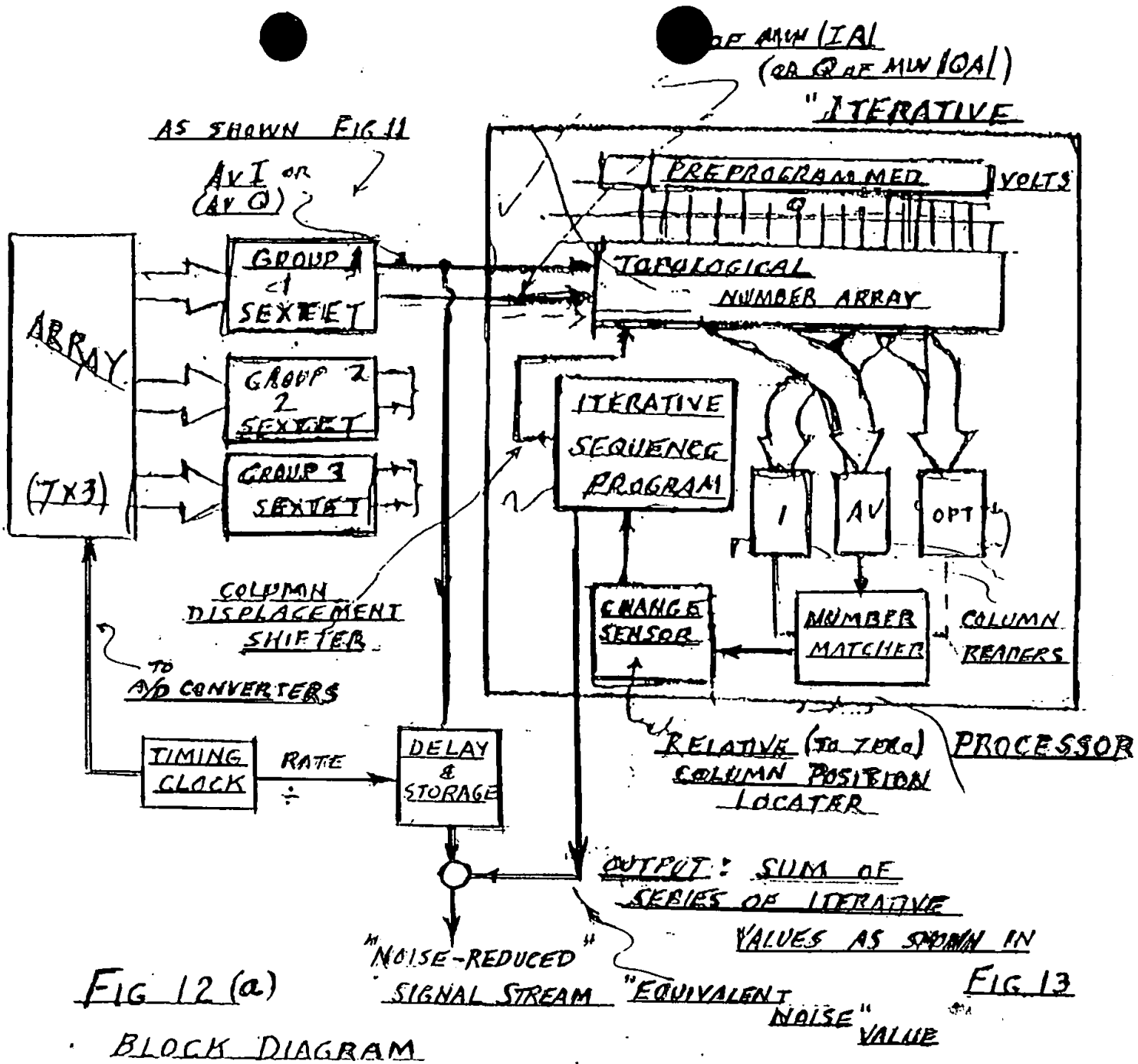


FIG 12 (a)

BLOCK DIAGRAM

ITERATIVE PROCESSING SCHEME

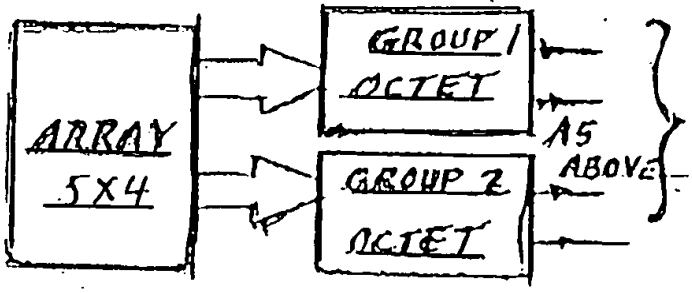
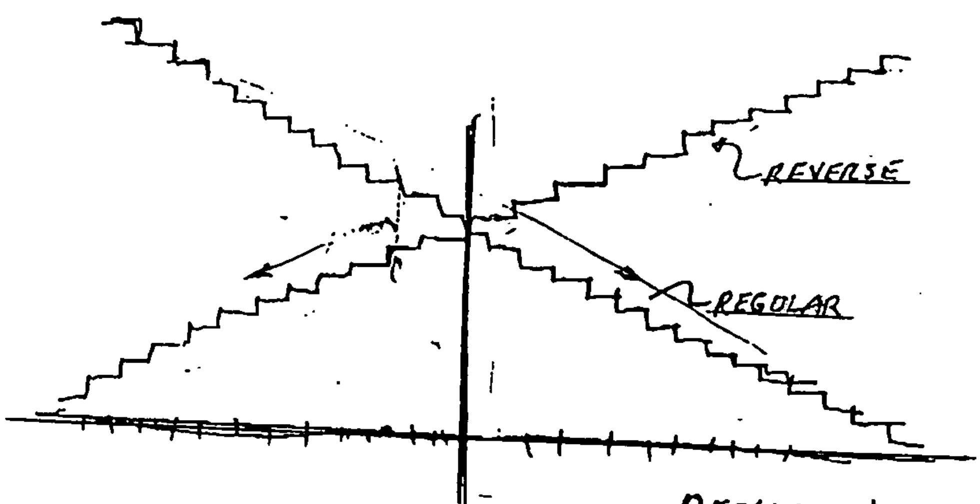


FIG 12 (b)



REGULAR & REVERSE "SCANS

FIG 12 (c)

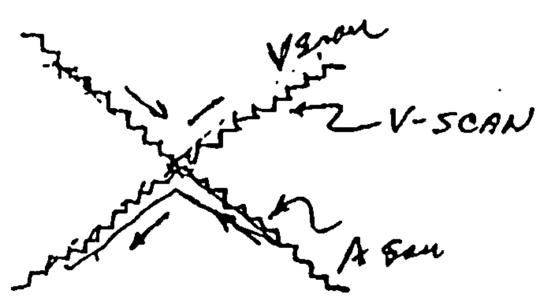


FIG 12 (d)

COMPOSITE "V SCAN & "A" SCAN

I data ==== [illegible]oup 1 ### Noise averages ### Avgs scanned in opposite sense ###

	Min IA	-.9 v	-.85 v	-.8 v	-.75 v	-.7 v	-.65 v	-.6 v	-.55 v	-.5 v	-.45 v	-.4 v	-.35 v	-.3 v	-.25 v	-.2 v	-.15 v	-.1 v
Avg		1.206	1.156	1.106	1.056	1.006	0.956	0.906	0.856	0.806	0.756	0.706	0.656	0.606	0.556	0.506	0.456	0.406
20B	0.041	-0.552	-0.502	-0.452	-0.402	-0.352	-0.302	-0.252	-0.202	-0.152	-0.102	-0.052	0.002	0.048	0.098	0.148	0.198	0.248
Avg		0.691	0.641	0.591	0.541	0.491	0.441	0.391	0.341	0.291	0.241	0.191	0.141	0.091	0.041	0.009	-0.059	-0.109
21A	-0.052	-1.161	-1.111	-1.061	-1.011	-0.961	-0.911	-0.861	-0.811	-0.761	-0.711	-0.661	-0.611	-0.561	-0.511	-0.461	-0.411	-0.361
Avg		0.735	0.685	0.635	0.585	0.535	0.485	0.435	0.385	0.335	0.285	0.235	0.185	0.135	0.085	0.035	0.015	-0.065
22A	0.060	-1.005	-0.955	-0.905	-0.855	-0.805	-0.755	-0.705	-0.655	-0.605	-0.555	-0.505	-0.455	-0.405	-0.355	-0.305	-0.255	-0.205
Avg		0.654	0.604	0.554	0.504	0.454	0.404	0.354	0.304	0.254	0.204	0.154	0.104	0.054	0.004	-0.046	-0.096	-0.146
23A	0.022	-1.124	-1.074	-1.024	-0.974	-0.924	-0.874	-0.824	-0.774	-0.724	-0.674	-0.624	-0.574	-0.524	-0.474	-0.424	-0.374	-0.324
Avg		1.166	1.116	1.066	1.016	0.966	0.916	0.866	0.816	0.766	0.716	0.666	0.616	0.566	0.516	0.466	0.416	0.366
24A	-0.002	-0.637	-0.587	-0.537	-0.487	-0.437	-0.387	-0.337	-0.287	-0.237	-0.187	-0.137	-0.087	-0.037	0.013	0.063	0.113	0.163
Avg		1.100	1.050	1.000	0.950	0.900	0.850	0.800	0.750	0.700	0.650	0.600	0.550	0.500	0.450	0.400	0.350	0.300
25B	-0.032	-0.732	-0.682	-0.632	-0.582	-0.532	-0.482	-0.432	-0.382	-0.332	-0.282	-0.232	-0.182	-0.132	-0.082	-0.032	0.018	0.068
Avg		0.487	0.437	0.387	0.337	0.287	0.237	0.187	0.137	0.087	0.037	-0.013	-0.063	-0.113	-0.163	-0.213	-0.263	-0.313
26B	-0.169	-1.481	-1.431	-1.381	-1.331	-1.281	-1.231	-1.181	-1.131	-1.081	-1.031	-0.981	-0.931	-0.881	-0.831	-0.781	-0.731	-0.681
Avg		0.924	0.874	0.824	0.774	0.724	0.674	0.624	0.574	0.524	0.474	0.424	0.374	0.324	0.274	0.224	0.174	0.124
27A	0.120	-0.756	-0.706	-0.656	-0.606	-0.556	-0.506	-0.456	-0.406	-0.356	-0.306	-0.256	-0.206	-0.156	-0.106	-0.056	-0.006	0.044
Avg		0.782	0.732	0.682	0.632	0.582	0.532	0.482	0.432	0.382	0.332	0.282	0.232	0.182	0.132	0.082	0.032	-0.018
28C	0.178	-0.840	-0.790	-0.740	-0.690	-0.640	-0.590	-0.540	-0.490	-0.440	-0.390	-0.340	-0.290	-0.240	-0.190	-0.140	-0.090	-0.040
Avg		1.246	1.196	1.146	1.096	1.046	0.996	0.946	0.896	0.846	0.796	0.746	0.696	0.646	0.596	0.546	0.496	0.446
29C	0.129	-0.683	-0.633	-0.583	-0.533	-0.483	-0.433	-0.383	-0.333	-0.283	-0.233	-0.183	-0.133	-0.083	-0.033	0.017	0.067	0.117
Avg		0.848	0.798	0.748	0.698	0.648	0.598	0.548	0.498	0.448	0.398	0.348	0.298	0.248	0.198	0.148	0.098	0.048
30B	0.032	-0.921	-0.871	-0.821	-0.771	-0.721	-0.671	-0.621	-0.571	-0.521	-0.471	-0.421	-0.371	-0.321	-0.271	-0.221	-0.171	-0.121
Avg		0.786	0.736	0.686	0.636	0.586	0.536	0.486	0.436	0.386	0.336	0.286	0.236	0.186	0.136	0.086	0.036	-0.014
31C	-0.174	-1.187	-1.137	-1.087	-1.037	-0.987	-0.937	-0.887	-0.837	-0.787	-0.737	-0.687	-0.637	-0.587	-0.537	-0.487	-0.437	-0.387
Avg		1.060	1.010	0.960	0.910	0.860	0.810	0.760	0.710	0.660	0.610	0.560	0.510	0.460	0.410	0.360	0.310	0.260
32C	-0.015	-0.755	-0.705	-0.655	-0.605	-0.555	-0.505	-0.455	-0.405	-0.355	-0.305	-0.255	-0.205	-0.155	-0.105	-0.055	0.005	0.045
Avg		0.993	0.943	0.893	0.843	0.793	0.743	0.693	0.643	0.593	0.543	0.493	0.443	0.393	0.343	0.293	0.243	0.193
33C	-0.090	-0.887	-0.837	-0.787	-0.737	-0.687	-0.637	-0.587	-0.537	-0.487	-0.437	-0.387	-0.337	-0.287	-0.237	-0.187	-0.137	-0.087
Avg		0.530	0.480	0.430	0.380	0.330	0.280	0.230	0.180	0.130	0.080	0.030	-0.020	-0.070	-0.120	-0.170	-0.220	-0.270
34A	-0.209	-1.479	-1.429	-1.379	-1.329	-1.279	-1.229	-1.179	-1.129	-1.079	-1.029	-0.979	-0.929	-0.879	-0.829	-0.779	-0.729	-0.679
Avg		1.035	0.985	0.935	0.885	0.835	0.785	0.735	0.685	0.635	0.585	0.535	0.485	0.435	0.385	0.335	0.285	0.235
35C	-0.083	-0.849	-0.799	-0.749	-0.699	-0.649	-0.599	-0.549	-0.499	-0.449	-0.399	-0.349	-0.299	-0.249	-0.199	-0.149	-0.099	-0.048
Avg		1.171	1.121	1.071	1.021	0.971	0.921	0.871	0.821	0.771	0.721	0.671	0.621	0.571	0.521	0.471	0.421	0.371
36B	0.212	-0.841	-0.791	-0.741	-0.691	-0.641	-0.591	-0.541	-0.491	-0.441	-0.391	-0.341	-0.291	-0.241	-0.191	-0.141	-0.091	-0.041
Avg		1.024	0.974	0.924	0.874	0.824	0.774	0.724	0.674	0.624	0.574	0.524	0.474	0.424	0.374	0.324	0.274	0.224
37C	0.015	-0.761	-0.711	-0.661	-0.611	-0.561	-0.511	-0.461	-0.411	-0.361	-0.311	-0.261	-0.211	-0.161	-0.111	-0.061	0.011	0.039
Avg		0.616	0.566	0.516	0.466	0.416	0.366	0.316	0.266	0.216	0.166	0.116	0.066	0.016	-0.034	-0.084	-0.134	-0.184
39B	0.003	-1.181	-1.131	-1.081	-1.031	-0.981	-0.931	-0.881	-0.831	-0.781	-0.731	-0.681	-0.631	-0.581	-0.531	-0.481	-0.431	-0.381

FIG. 13(a)

[redacted] Group 1 [redacted] Noise ave [redacted]

-.05 v	0 v	.05 v	.1 v	.15 v	.2 v	.25 v	.3 v	.35 v	.40 v	.45 v	.5 v	.55 v	.6 v	.65 v	.7 v	.75 v
0.356	0.306	0.256	0.206	0.156	0.106	0.056	0.006	-0.044	-0.094	-0.144	-0.194	-0.244	-0.294	-0.344	-0.394	-0.444
0.298	0.348	0.398	0.448	0.498	0.548	0.598	0.648	0.698	0.748	0.798	0.848	0.898	0.948	0.998	1.048	1.098
-0.159	-0.209	-0.259	-0.309	-0.359	-0.409	-0.459	-0.509	-0.559	-0.609	-0.659	-0.709	-0.759	-0.809	-0.859	-0.909	-0.959
-0.311	-0.261	-0.211	-0.161	-0.111	-0.061	-0.011	0.039	0.089	0.139	0.189	0.239	0.289	0.339	0.389	0.439	0.489
-0.115	-0.165	-0.215	-0.265	-0.315	-0.365	-0.415	-0.465	-0.515	-0.565	-0.615	-0.665	-0.715	-0.765	-0.815	-0.865	-0.915
-0.155	-0.105	-0.055	-0.005	0.045	0.095	0.145	0.195	0.245	0.295	0.345	0.395	0.445	0.495	0.545	0.595	0.645
-0.196	-0.246	-0.296	-0.346	-0.396	-0.446	-0.496	-0.546	-0.596	-0.646	-0.696	-0.746	-0.796	-0.846	-0.896	-0.946	-0.996
-0.274	-0.224	-0.174	-0.124	-0.074	-0.024	0.026	0.076	0.126	0.176	0.226	0.276	0.326	0.376	0.426	0.476	0.526
0.316	0.266	0.216	0.166	0.116	0.066	0.016	-0.034	-0.084	-0.134	-0.184	-0.234	-0.284	-0.334	-0.384	-0.434	-0.484
0.213	0.263	0.313	0.363	0.413	0.463	0.513	0.563	0.613	0.663	0.713	0.763	0.813	0.863	0.913	0.963	1.013
0.250	0.200	0.150	0.100	0.050	0.000	-0.050	-0.100	-0.150	-0.200	-0.250	-0.300	-0.350	-0.400	-0.450	-0.500	-0.550
0.119	0.169	0.219	0.269	0.319	0.369	0.419	0.469	0.519	0.569	0.619	0.669	0.719	0.769	0.819	0.869	0.919
-0.363	-0.413	-0.463	-0.513	-0.563	-0.613	-0.663	-0.713	-0.763	-0.813	-0.863	-0.913	-0.963	-1.013	-1.063	-1.113	-1.163
-0.631	-0.581	-0.531	-0.481	-0.431	-0.381	-0.331	-0.281	-0.231	-0.181	-0.131	-0.081	-0.031	0.019	0.069	0.119	0.169
0.074	-0.024	-0.024	-0.076	0.126	-0.176	-0.226	-0.276	-0.326	-0.376	-0.426	-0.476	-0.526	-0.576	-0.626	-0.676	-0.726
0.094	0.144	0.194	0.244	0.294	0.344	0.394	0.444	0.494	0.544	0.594	0.644	0.694	0.744	0.794	0.844	0.894
-0.066	-0.116	-0.166	-0.216	-0.266	-0.316	-0.366	-0.416	-0.466	-0.516	-0.566	-0.616	-0.666	-0.716	-0.766	-0.816	-0.866
0.010	0.060	0.110	0.160	0.210	0.260	0.310	0.360	0.410	0.460	0.510	0.560	0.610	0.660	0.710	0.760	0.810
0.396	0.346	0.296	0.246	0.196	0.146	0.096	0.046	-0.004	-0.054	-0.104	-0.154	-0.204	-0.254	-0.304	-0.354	-0.404
0.167	0.217	0.267	0.317	0.367	0.417	0.467	0.517	0.567	0.617	0.667	0.717	0.767	0.817	0.867	0.917	0.967
-0.002	-0.052	-0.102	-0.152	-0.202	-0.252	-0.302	-0.352	-0.402	-0.452	-0.502	-0.552	-0.602	-0.652	-0.702	-0.752	-0.802
-0.071	-0.021	0.029	0.079	0.129	0.179	0.229	0.279	0.329	0.379	0.429	0.479	0.529	0.579	0.629	0.679	0.729
-0.064	-0.114	-0.164	-0.214	-0.264	-0.314	-0.364	-0.414	-0.464	-0.514	-0.564	-0.614	-0.664	-0.714	-0.764	-0.814	-0.864
-0.337	-0.287	-0.237	-0.187	-0.137	-0.087	-0.037	0.013	0.063	0.113	0.163	0.213	0.263	0.313	0.363	0.413	0.463
0.210	0.160	0.110	0.060	0.010	-0.040	-0.090	-0.140	-0.190	-0.240	-0.290	-0.340	-0.390	-0.440	-0.490	-0.540	-0.590
0.095	0.145	0.195	0.245	0.295	0.345	0.395	0.445	0.495	0.545	0.595	0.645	0.695	0.745	0.795	0.845	0.895
0.143	0.093	0.043	-0.007	-0.057	-0.107	-0.157	-0.207	-0.257	-0.307	-0.357	-0.407	-0.457	-0.507	-0.557	-0.607	-0.657
-0.037	0.013	0.063	0.113	0.163	0.213	0.263	0.313	0.363	0.413	0.463	0.513	0.563	0.613	0.663	0.713	0.763
-0.320	-0.370	-0.420	-0.470	-0.520	-0.570	-0.620	-0.670	-0.720	-0.770	-0.820	-0.870	-0.920	-0.970	-1.020	-1.070	-1.120
-0.629	-0.579	-0.529	-0.479	-0.429	-0.379	-0.329	-0.279	-0.229	-0.179	-0.129	-0.079	-0.029	0.021	0.071	0.121	0.171
0.185	0.135	0.085	0.035	-0.015	-0.065	-0.115	-0.165	-0.215	-0.265	-0.315	-0.365	-0.415	-0.465	-0.515	-0.565	-0.615
0.002	0.052	0.102	0.152	0.202	0.252	0.302	0.352	0.402	0.452	0.502	0.552	0.602	0.652	0.702	0.752	0.802
0.321	0.271	0.221	0.171	0.121	0.071	0.021	-0.029	-0.079	-0.129	-0.179	-0.229	-0.279	-0.329	-0.379	-0.429	-0.479
0.009	0.059	0.109	0.159	0.209	0.259	0.309	0.359	0.409	0.459	0.509	0.559	0.609	0.659	0.709	0.759	0.809
0.174	0.124	0.074	0.024	-0.026	-0.076	-0.126	-0.176	-0.226	-0.276	-0.326	-0.376	-0.426	-0.476	-0.526	-0.576	-0.626
0.089	0.139	0.189	0.239	0.289	0.339	0.389	0.439	0.489	0.539	0.589	0.639	0.689	0.739	0.789	0.839	0.889
-0.234	-0.284	-0.334	-0.384	-0.434	-0.484	-0.534	-0.584	-0.634	-0.684	-0.734	-0.784	-0.834	-0.884	-0.934	-0.984	-1.034
-0.331	-0.281	-0.231	-0.181	-0.131	-0.081	-0.031	0.019	0.069	0.119	0.169	0.219	0.269	0.319	0.369	0.419	0.469

FIG.13(6)

I data ==== 0 dB ==== Group 1 Average I values *** Avgs scanned in opposite sense ***

	Min IA	-.9 v	-.85 v	-.8 v	-.75 v	-.7 v	-.65 v	-.6 v	-.55 v	-.5 v	-.45 v	-.4 v	-.35 v	-.3 v	-.25 v	-.2 v	-.15 v	-.1 v
Avg		2.431	2.381	2.331	2.281	2.231	2.181	2.131	2.081	2.031	1.981	1.931	1.881	1.831	1.781	1.731	1.681	1.631
20B	0.041	0.672	0.722	0.772	0.822	0.872	0.922	0.972	1.022	1.072	1.122	1.172	1.222	1.272	1.322	1.372	1.422	1.472
Avg		1.916	1.866	1.816	1.766	1.716	1.666	1.616	1.566	1.516	1.466	1.416	1.366	1.316	1.266	1.216	1.166	1.116
21A	-0.052	0.064	0.114	0.164	0.214	0.264	0.314	0.364	0.414	0.464	0.514	0.564	0.614	0.664	0.714	0.764	0.814	0.864
Avg		1.960	1.910	1.860	1.810	1.760	1.710	1.660	1.610	1.560	1.510	1.460	1.410	1.360	1.310	1.260	1.210	1.160
22A	0.060	0.220	0.270	0.320	0.370	0.420	0.470	0.520	0.570	0.620	0.670	0.720	0.770	0.820	0.870	0.920	0.970	1.020
Avg		1.878	1.828	1.778	1.728	1.678	1.628	1.578	1.528	1.478	1.428	1.378	1.328	1.278	1.228	1.178	1.128	1.078
23A	0.022	0.101	0.151	0.201	0.251	0.301	0.351	0.401	0.451	0.501	0.551	0.601	0.651	0.701	0.751	0.801	0.851	0.901
Avg		2.390	2.340	2.290	2.240	2.190	2.140	2.090	2.040	1.990	1.940	1.890	1.840	1.790	1.740	1.690	1.640	1.590
24A	-0.002	0.588	0.638	0.688	0.738	0.788	0.838	0.888	0.938	0.988	1.038	1.088	1.138	1.188	1.238	1.288	1.338	1.388
Avg		2.325	2.275	2.225	2.175	2.125	2.075	2.025	1.975	1.925	1.875	1.825	1.775	1.725	1.675	1.625	1.575	1.525
25B	-0.032	0.493	0.543	0.593	0.643	0.693	0.743	0.793	0.843	0.893	0.943	0.993	1.043	1.093	1.143	1.193	1.243	1.293
Avg		1.712	1.662	1.612	1.562	1.512	1.462	1.412	1.362	1.312	1.262	1.212	1.162	1.112	1.062	1.012	0.962	0.912
26B	-0.169	0.257	0.307	0.357	0.407	0.457	0.507	0.557	0.607	0.657	0.707	0.757	0.807	0.857	0.907	0.957	1.007	1.057
Avg		2.149	2.099	2.049	1.999	1.949	1.899	1.849	1.799	1.749	1.699	1.649	1.599	1.549	1.499	1.449	1.399	1.349
27A	0.120	0.468	0.518	0.568	0.618	0.668	0.718	0.768	0.818	0.868	0.918	0.968	1.018	1.068	1.118	1.168	1.218	1.268
Avg		2.007	1.957	1.907	1.857	1.807	1.757	1.707	1.657	1.607	1.557	1.507	1.457	1.407	1.357	1.307	1.257	1.207
28C	0.179	0.385	0.435	0.485	0.535	0.585	0.635	0.685	0.735	0.785	0.835	0.885	0.935	0.985	1.035	1.085	1.135	1.185
Avg		2.471	2.421	2.371	2.321	2.271	2.221	2.171	2.121	2.071	2.021	1.971	1.921	1.871	1.821	1.771	1.721	1.671
29C	-0.129	0.542	0.592	0.642	0.692	0.742	0.792	0.842	0.892	0.942	0.992	1.042	1.092	1.142	1.192	1.242	1.292	1.342
Avg		2.073	2.023	1.973	1.923	1.873	1.823	1.773	1.723	1.673	1.623	1.573	1.523	1.473	1.423	1.373	1.323	1.273
30B	0.032	0.304	0.354	0.404	0.454	0.504	0.554	0.604	0.654	0.704	0.754	0.804	0.854	0.904	0.954	1.004	1.054	1.104
Avg		2.011	1.961	1.911	1.861	1.811	1.761	1.711	1.661	1.611	1.561	1.511	1.461	1.411	1.361	1.311	1.261	1.211
31C	-0.174	0.037	0.087	0.137	0.187	0.237	0.287	0.337	0.387	0.437	0.487	0.537	0.587	0.637	0.687	0.737	0.787	0.837
Avg		2.285	2.235	2.185	2.135	2.085	2.035	1.985	1.935	1.885	1.835	1.785	1.735	1.685	1.635	1.585	1.535	1.485
32C	-0.015	0.470	0.520	0.570	0.620	0.670	0.720	0.770	0.820	0.870	0.920	0.970	1.020	1.070	1.120	1.170	1.220	1.270
Avg		2.218	2.168	2.118	2.068	2.018	1.968	1.918	1.868	1.818	1.768	1.718	1.668	1.618	1.568	1.518	1.468	1.418
33C	-0.080	0.338	0.388	0.438	0.488	0.538	0.588	0.638	0.688	0.738	0.788	0.838	0.888	0.938	0.988	1.038	1.088	1.138
Avg		1.755	1.705	1.655	1.605	1.555	1.505	1.455	1.405	1.355	1.305	1.255	1.205	1.155	1.105	1.055	1.005	0.955
34A	-0.209	0.255	0.205	0.155	0.105	0.055	0.005	0.045	0.095	0.145	0.195	0.245	0.295	0.345	0.395	0.445	0.495	0.545
Avg		2.260	2.210	2.160	2.110	2.060	2.010	1.960	1.910	1.860	1.810	1.760	1.710	1.660	1.610	1.560	1.510	1.460
35C	-0.083	0.377	0.427	0.477	0.527	0.577	0.627	0.677	0.727	0.777	0.827	0.877	0.927	0.977	1.027	1.077	1.127	1.177
Avg		2.396	2.346	2.296	2.246	2.196	2.146	2.096	2.046	1.996	1.946	1.896	1.846	1.796	1.746	1.696	1.646	1.596
36B	-0.212	0.384	0.434	0.484	0.534	0.584	0.634	0.684	0.734	0.784	0.834	0.884	0.934	0.984	1.034	1.084	1.134	1.184
Avg		2.249	2.199	2.149	2.099	2.049	1.999	1.949	1.899	1.849	1.799	1.749	1.699	1.649	1.599	1.549	1.499	1.449
37C	0.015	0.463	0.513	0.563	0.613	0.663	0.713	0.763	0.813	0.863	0.913	0.963	1.013	1.063	1.113	1.163	1.213	1.263
Avg		1.941	1.891	1.841	1.791	1.741	1.691	1.641	1.591	1.541	1.491	1.441	1.391	1.341	1.291	1.241	1.191	1.141	1.091	1.041
38B	0.003	0.044	0.094	0.144	0.194	0.244	0.294	0.344	0.394	0.444	0.494	0.544	0.594	0.644	0.694	0.744	0.794	0.844

FIG. 13(c)

==== I data ==== 0 dB ==== Group 1 Average I values

-.05 v	0 v	.05 v	.1 v	.15 v	.2 v	.25 v	.3 v	.35 v	.4 v	.45 v	.5 v	.55 v	.6 v	.65 v	.7 v	.75 v
1.581	1.531	1.481	1.431	1.381	1.331	1.281	1.231	1.181	1.131	1.081	1.031	0.981	0.931	0.881	0.831	0.781
1.522	1.572	1.622	1.672	1.722	1.772	1.822	1.872	1.922	1.972	2.022	2.072	2.122	2.172	2.222	2.272	2.322
1.066	1.016	0.966	0.916	0.866	0.816	0.766	0.716	0.666	0.616	0.566	0.516	0.466	0.416	0.366	0.316	0.266
0.914	0.964	1.014	1.064	1.114	1.164	1.214	1.264	1.314	1.364	1.414	1.464	1.514	1.564	1.614	1.664	1.714
1.110	1.060	1.010	0.960	0.910	0.860	0.810	0.760	0.710	0.660	0.610	0.560	0.510	0.460	0.410	0.360	0.310
1.070	1.120	1.170	1.220	1.270	1.320	1.370	1.420	1.470	1.520	1.570	1.620	1.670	1.720	1.770	1.820	1.870
1.028	0.978	0.928	0.878	0.828	0.778	0.728	0.678	0.628	0.578	0.528	0.478	0.428	0.378	0.328	0.278	0.228
0.951	1.001	1.051	1.101	1.151	1.201	1.251	1.301	1.351	1.401	1.451	1.501	1.551	1.601	1.651	1.701	1.751
1.540	1.490	1.440	1.390	1.340	1.290	1.240	1.190	1.140	1.090	1.040	0.990	0.940	0.890	0.840	0.790	0.740
1.438	1.488	1.538	1.588	1.638	1.688	1.738	1.788	1.838	1.888	1.938	1.988	2.038	2.088	2.138	2.188	2.238
1.475	1.425	1.375	1.325	1.275	1.225	1.175	1.125	1.075	1.025	0.975	0.925	0.875	0.825	0.775	0.725	0.675
1.343	1.393	1.443	1.493	1.543	1.593	1.643	1.693	1.743	1.793	1.843	1.893	1.943	1.993	2.043	2.093	2.143
0.862	0.812	0.762	0.712	0.662	0.612	0.562	0.512	0.462	0.412	0.362	0.312	0.262	0.212	0.162	0.112	0.062
0.593	0.643	0.693	0.743	0.793	0.843	0.893	0.943	0.993	1.043	1.093	1.143	1.193	1.243	1.293	1.343	1.393
1.299	1.249	1.199	1.149	1.099	1.049	0.999	0.949	0.899	0.849	0.799	0.749	0.699	0.649	0.599	0.549	0.499
1.318	1.368	1.418	1.468	1.518	1.568	1.618	1.668	1.718	1.768	1.818	1.868	1.918	1.968	2.018	2.068	2.118
1.157	1.107	1.057	1.007	0.957	0.907	0.857	0.807	0.757	0.707	0.657	0.607	0.557	0.507	0.457	0.407	0.357
1.235	1.285	1.335	1.385	1.435	1.485	1.535	1.585	1.635	1.685	1.735	1.785	1.835	1.885	1.935	1.985	2.035
1.621	1.571	1.521	1.471	1.421	1.371	1.321	1.271	1.221	1.171	1.121	1.071	1.021	0.971	0.921	0.871	0.821
1.392	1.442	1.492	1.542	1.592	1.642	1.692	1.742	1.792	1.842	1.892	1.942	1.992	2.042	2.092	2.142	2.192
1.223	1.173	1.123	1.073	1.023	0.973	0.923	0.873	0.823	0.773	0.723	0.673	0.623	0.573	0.523	0.473	0.423
1.154	1.204	1.254	1.304	1.354	1.404	1.454	1.504	1.554	1.604	1.654	1.704	1.754	1.804	1.854	1.904	1.954
1.161	1.111	1.061	1.011	0.961	0.911	0.861	0.811	0.761	0.711	0.661	0.611	0.561	0.511	0.461	0.411	0.361
0.987	0.937	0.987	1.037	1.087	1.137	1.187	1.237	1.287	1.337	1.387	1.437	1.487	1.537	1.587	1.637	1.687
1.435	1.385	1.335	1.285	1.235	1.185	1.135	1.085	1.035	0.985	0.935	0.885	0.835	0.785	0.735	0.685	0.635
1.320	1.370	1.420	1.470	1.520	1.570	1.620	1.670	1.720	1.770	1.820	1.870	1.920	1.970	2.020	2.070	2.120
1.368	1.318	1.268	1.218	1.168	1.118	1.068	1.018	0.968	0.918	0.868	0.818	0.768	0.718	0.668	0.618	0.568
1.188	1.238	1.288	1.338	1.388	1.438	1.488	1.538	1.588	1.638	1.688	1.738	1.788	1.838	1.888	1.938	1.988
0.905	0.855	0.805	0.755	0.705	0.655	0.605	0.555	0.505	0.455	0.405	0.355	0.305	0.255	0.205	0.155	0.105
0.595	0.645	0.695	0.745	0.795	0.845	0.895	0.945	0.995	1.045	1.095	1.145	1.195	1.245	1.295	1.345	1.395
1.410	1.360	1.310	1.260	1.210	1.160	1.110	1.060	1.010	0.960	0.910	0.860	0.810	0.760	0.710	0.660	0.610
1.227	1.277	1.327	1.377	1.427	1.477	1.527	1.577	1.627	1.677	1.727	1.777	1.827	1.877	1.927	1.977	2.027
1.546	1.496	1.446	1.396	1.346	1.296	1.246	1.196	1.146	1.096	1.046	0.996	0.946	0.896	0.846	0.796	0.746
1.234	1.284	1.334	1.384	1.434	1.484	1.534	1.584	1.634	1.684	1.734	1.784	1.834	1.884	1.934	1.984	2.034
1.399	1.349	1.299	1.249	1.199	1.149	1.099	1.049	0.999	0.949	0.899	0.849	0.799	0.749	0.699	0.649	0.599
1.313	1.363	1.413	1.463	1.513	1.563	1.613	1.663	1.713	1.763	1.813	1.863	1.913	1.963	2.013	2.063	2.113
0.991	0.941	0.891	0.841	0.791	0.741	0.691	0.641	0.591	0.541	0.491	0.441	0.391	0.341	0.291	0.241	0.191
0.894	0.944	0.994	1.044	1.094	1.144	1.194	1.244	1.294	1.344	1.394	1.444	1.494	1.544	1.594	1.644	1.694

FIG. 13(d)

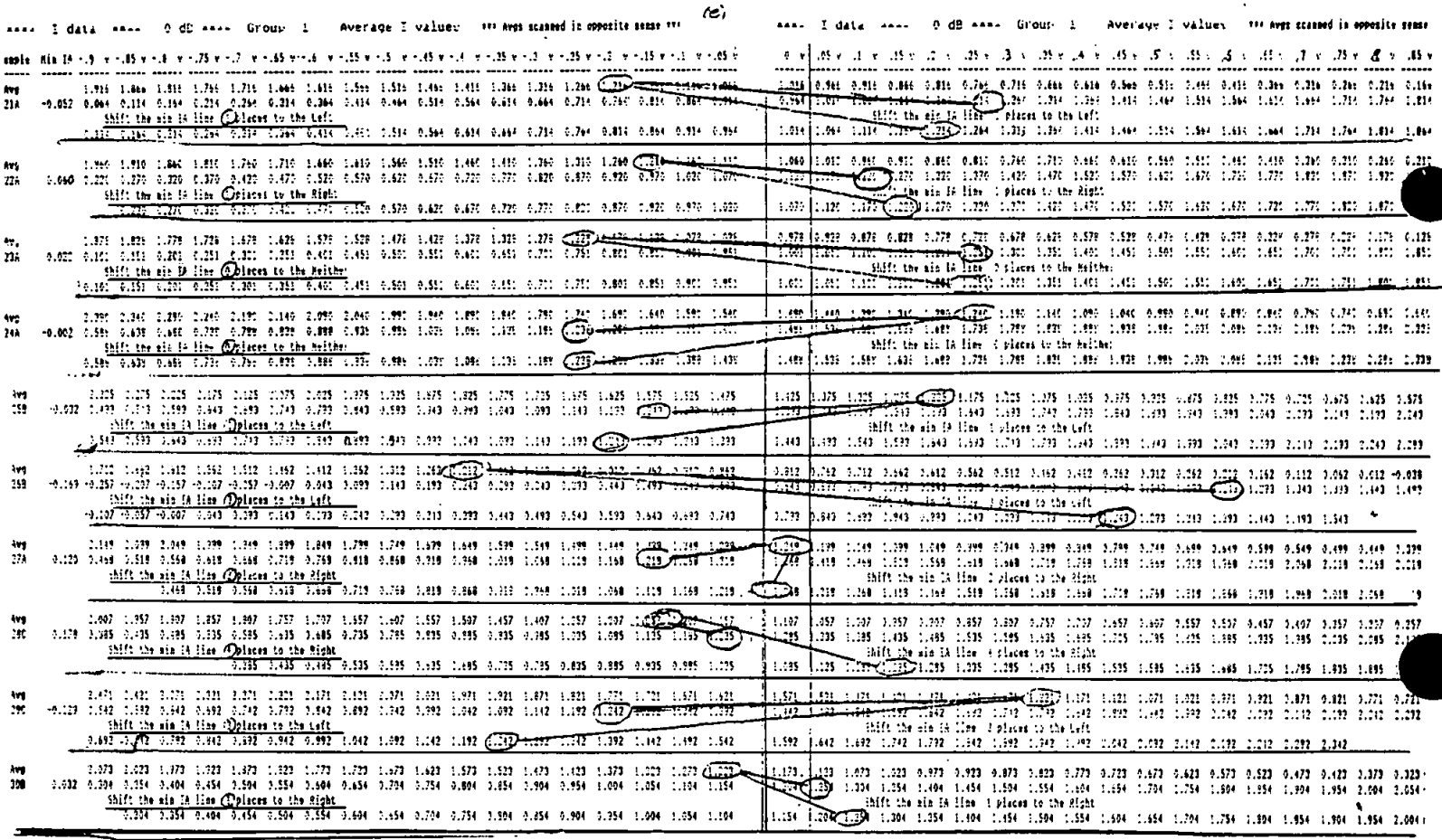


FIG. 13(e)

RANDOM **I data**

Trial/ Group		Orig Noise Avg	New Noise Average 1	2	3	4	5	Equiv Voltage Added	Last Noise Avg	Ratio Orig / Last
205	1	0.1481	0.0e6e	-0.1314	0.0e6e	-0.05e4	0.00e1	-0.1783	-0.0252	5.9
205	2	0.5426	0.3e62	0.1162	-0.1336	-0.0006	0.0553	-0.5201	0.0225	24.1
205	3	0.6215	0.5002	0.2502	0.0002	-0.1246	-0.0e23	-0.e524	-0.0311	20.0
206	1	-0.2506	-0.0506	0.1992	-0.0508	0.0742	0.0117	0.2313	-0.019e	12.8
206	2	0.1813	-0.1142	0.1358	-0.1142	0.0108	-0.0517	-0.2017	-0.0205	8.9
20e	3	-0.4060	-0.31e5	-0.0ee5	0.1835	0.0585	-0.004u	0.4332	0.0272	14.9
207	1	-0.2893	-0.0300	0.2200	-0.0300	0.0950	0.0e25	0.290e	0.0013	223.5
207	2	-0.0591	0.12e6	-0.1232	0.12e6	0.0018	-0.0e07	0.029e	-0.0295	2.0
207	3	0.8016	0.7904	0.5404	0.2904	0.1e54	0.1029	-0.7300	0.0716	11.2
208	1	-0.32e9	-0.1255	0.1245	-0.1255	-0.0005	0.0e20	0.3577	0.0308	10.e
208	2	-0.5892	-0.4528	-0.2026	0.0472	-0.0778	-0.0153	0.e052	0.0160	3e.9
208	3	-0.5162	-0.3509	-0.1009	0.1491	0.0241	-0.0584	0.5090	-0.0071	72.4
209	1	-0.3328	-0.2315	0.0185	-0.2315	-0.10e5	-0.0440	0.3200	-0.0128	26.1
209	2	0.7883	0.628e	0.378e	0.128e	0.0038	-0.0589	-0.8160	-0.0277	28.5
209	3	-0.3146	-0.1996	0.0504	-0.1996	-0.074e	-0.0121	0.3338	0.0192	1e.4
210	1	-0.4353	-0.2432	0.00ee	-0.2432	-0.1182	-0.0557	0.4109	-0.0244	17.8
210	2	-0.1066	0.1332	-0.11e8	0.1332	0.0082	-0.0545	0.0836	-0.0230	4.6
210	3	0.2597	0.0237	-0.2243	0.0237	-0.0793	-0.0368	-0.2e52	-0.0055	46.9
211	1	-0.2477	-0.022e	0.2280	-0.022e	0.1030	0.0405	0.2569	0.0093	26.7
211	2	-0.2277	-0.2138	0.03e4	-0.21se	-0.0688	**-0.0263**	0.2327	0.0046	46.e
211	3	0.e775	0.574e	0.344e	0.094e	-0.0304	0.0321	-0.e7e7	0.0008	820.7
212	1	0.1145	-0.2323	0.017-	-0.2322	-0.1073	-0.044e	-0.1280	-0.0136	8.4
212	2	0.3209	0.2503	0.0003	-0.2497	-0.1247	-0.0e22	-0.3518	-0.0309	10.4
212	3	0.2595	0.2159	-0.0341	0.2159	0.0909	0.028e	-0.2624	-0.0029	90.1
213	1	0.4217	0.2221	-0.0279	0.2221	0.0971	0.04se	-0.4183	0.0034	125.3
213	2	-0.5357	-0.3012	-0.0512	0.1586	0.0738	0.011e	0.5157	-0.0199	26.7
213	3	-0.2945	-0.2748	-0.0248	0.2252	0.1002	0.0527	0.3008	0.00e5	45.5
214	1	-0.6983	-0.5029	-0.2529	-0.0029	0.1221	0.057e	0.7267	0.0403	24.e
214	2	0.7664	0.7016	0.4516	0.2016	0.0766	0.0141	-0.783e	-0.0171	44.7
214	3	0.3609	0.2281	-0.0219	0.2281	0.1031	0.040e	-0.3516	0.0093	38.7
215	1	-0.5990	-0.3920	-0.1420	0.1080	-0.0170	0.0455	0.e132	0.0142	42.1
215	2	-0.6418	-0.61e9	-0.3669	-0.1169	0.0081	-0.0544	0.6167	-0.0231	27.8
215	3	-0.2020	-0.016e	0.2334	-0.016e	0.1084	0.0459	0.21ee	0.014e	13.8
21e	1	0.2267	-0.0009	0.2491	-0.0009	0.1241	0.0616	-0.1964	0.0303	7.5
216	2	-0.7869	-0.7607	-0.5107	-0.2607	-0.1357	-0.0732	0.7450	-0.0419	18.8
216	3	-0.3518	-0.0994	0.150e	-0.0994	0.0256	-0.03e9	0.3462	-0.0057	e1.7
217	1	-0.3168	-0.0968	0.1532	-0.0968	0.0282	-0.0343	0.3138	-0.0031	103.9
217	2	0.3848	0.3126	0.0626	-0.1874	-0.0624	0.0001	-0.4160	-0.0312	12.3
217	3	0.3492	0.2517	0.0017	-0.2483	-0.1233	-0.0608	-0.3788	-0.0296	11.8
218	1	0.2154	0.0254	-0.2246	0.0254	-0.0996	-0.0371	-0.2253	-0.0059	37.2
218	2	-0.6434	-0.5998	-0.3498	-0.0998	0.0252	-0.0373	0.e373	-0.0061	106.0
218	3	0.251e	0.1355	-0.1145	0.1355	0.0105	-0.0520	-0.272a	-0.0207	12.1
219	1	-0.8197	-0.5113	-0.2613	-0.0113	0.1137	0.0512	0.8596	0.0200	41.1
219	2	-0.1859	0.0141	-0.2359	0.0141	-0.1109	-0.0404	0.1666	-0.0172	10.8
219	3	-0.2779	-0.1231	0.1269	-0.1231	0.0019	-0.0e0e	0.248e	-0.0294	9.5
220	1	-0.224e	-0.075e	0.1744	-0.075e	0.0494	-0.0141	0.1477	0.0181	12.7
220	2	-0.2729	-0.1709	0.0791	-0.1709	-0.0439	0.01ee	0.2582	-0.0146	18.e
220	3	-0.0854	-0.0404	0.20ve	-0.0404	0.0846	0.0141	0.07e3	-0.0091	9.4
221	1	-0.3921	-0.2118	0.0382	-0.2118	-0.0868	-0.0243	0.3990	0.0069	56.8
221	2	0.8987	0.7652	0.5652	0.2652	0.1eu2	0.0777	-0.8825	0.0e64	13.9
221	3	-0.3528	-0.3370	-0.0870	0.1e30	0.0e8u	-0.0e4-	0.3b7e	0.0068	5e.0

FIG. 14(a)

RANDOM Q data

Trial/ Group		Orig Noise Avg	New Noise Average 1	2	3	4	5	Equiv Voltage Added	Last Noise Avg	Ratio Orig :: Last
205	1	0.4440	0.3970	0.1470	-0.1030	0.0220	-0.0405	-0.4522	-0.0092	48.1
205	2	0.1928	0.0077	-0.2423	0.0077	-0.1173	-0.0548	-0.2163	-0.0235	8.2
205	3	0.2307	0.0307	-0.2193	0.0307	-0.0943	-0.0318	-0.2313	-0.0006	382.9
206	1	0.6667	0.5649	0.3149	0.0649	-0.0601	0.0024	-0.6955	-0.0288	23.1
206	2	-0.0959	0.1153	-0.1347	0.1153	-0.0097	0.0528	0.1174	0.0215	4.5
206	3	0.0218	-0.2565	-0.0065	0.2435	0.1185	0.0560	0.0030	0.0248	0.9
207	1	0.7412	0.7194	0.4694	0.2194	0.0944	0.0319	-0.7406	0.0006	1181.1
207	2	-0.2973	-0.2522	-0.0022	0.2478	0.1228	0.0603	0.3263	0.0290	10.2
207	3	0.3831	-0.0517	0.1983	-0.0517	0.0733	0.0108	-0.4036	-0.0205	18.7
208	1	0.2199	0.1728	-0.0772	0.1728	0.0478	-0.0147	-0.2033	0.0166	13.3
208	2	0.4198	0.3966	0.1466	-0.1034	0.0216	-0.0409	-0.4295	-0.0097	43.4
208	3	-0.1523	-0.0900	0.1600	-0.0900	0.0350	-0.0275	0.1561	0.0038	40.1
209	1	-0.3033	-0.2685	-0.0185	0.2315	0.1065	0.0440	0.3161	0.0127	23.8
209	2	-0.0808	0.0528	-0.1972	0.0528	-0.0722	-0.0097	0.1024	0.0216	3.7
209	3	-0.0148	0.1385	-0.1115	0.1385	0.0135	-0.0490	-0.0029	-0.0177	0.8
210	1	0.2507	0.1607	-0.0893	0.1607	0.0357	-0.0268	-0.2462	0.0044	56.8
210	2	0.2427	0.2049	-0.0451	0.2049	0.0799	0.0174	-0.2566	-0.0139	17.5
210	3	0.0961	-0.0761	-0.1739	-0.0761	0.0489	-0.0136	-0.0784	0.0177	5.4
211	1	0.2369	0.2232	-0.0268	0.2232	0.0982	0.0357	-0.2325	0.0044	53.5
211	2	0.4865	0.2534	0.0034	-0.2466	-0.1216	-0.0591	-0.5143	-0.0278	17.5
211	3	-0.7412	-0.7029	-0.4529	-0.2029	-0.0789	-0.0164	0.7560	0.0148	50.1
212	1	0.5285	0.3926	0.1426	-0.1074	0.0176	-0.0449	-0.5421	-0.0136	38.8
212	2	0.1817	0.0830	-0.1670	0.0830	-0.0420	0.0205	-0.1925	-0.0107	16.9
212	3	-0.0208	0.1420	-0.1080	0.1420	0.0170	-0.0455	0.0066	-0.0142	1.5
213	1	-0.2570	-0.1652	0.0848	-0.1652	-0.0402	0.0223	0.2480	-0.0090	28.7
213	2	-0.0064	0.0310	-0.2190	0.0310	-0.0940	-0.0315	0.0062	-0.0003	24.3
213	3	-0.5096	-0.3200	-0.0700	0.1800	0.0550	-0.0075	0.5333	0.0237	21.5
214	1	-0.0246	0.1703	-0.0797	0.1703	0.0453	-0.0172	0.0387	0.0141	1.8
214	2	-0.1595	-0.0912	0.1588	-0.0912	0.0338	-0.0287	0.1620	0.0025	62.8
214	3	0.1216	-0.0494	0.2006	-0.0494	0.0756	0.0131	-0.1398	-0.0181	6.7
215	1	-0.3403	-0.0213	0.2287	-0.0213	0.1037	0.0412	0.3502	0.0099	34.3
215	2	-0.1557	-0.0243	0.2257	-0.0243	0.1007	0.0382	0.1627	0.0069	22.4
215	3	-0.5943	-0.3037	-0.0537	0.1963	0.0713	0.0088	0.5718	-0.0225	26.5
216	1	0.1584	0.0282	-0.2218	0.0282	-0.0968	-0.0343	-0.1614	-0.0030	52.0
216	2	0.3981	0.3794	0.1294	-0.1206	0.0044	-0.0581	-0.4250	-0.0268	14.8
216	3	0.1159	-0.0841	0.1659	-0.0841	0.0409	-0.0216	-0.1063	0.0097	12.0
217	1	0.4497	0.2497	-0.0003	0.2497	0.1247	0.0622	-0.4188	0.0309	14.5
217	2	0.5273	0.2169	-0.0331	0.2169	0.0919	0.0294	-0.5292	-0.0019	278.7
217	3	0.1066	-0.0700	0.1800	-0.0700	0.0550	-0.0075	-0.0829	0.0238	4.5
218	1	-0.4485	-0.2822	-0.0322	0.2178	0.0928	0.0303	0.4475	-0.0010	453.7
218	2	0.0983	-0.1447	0.1053	-0.1447	-0.0197	0.0428	-0.0867	0.0115	8.5
218	3	0.0171	-0.1190	0.1310	-0.1190	0.0060	-0.0565	-0.0423	-0.0252	0.7
219	1	0.0508	-0.1111	0.1389	-0.1111	0.0139	-0.0486	-0.0681	-0.0173	2.9
219	2	0.2668	0.0668	-0.1832	0.0668	-0.0582	0.0043	-0.2938	-0.0270	9.9
219	3	-0.2792	-0.1891	0.0609	-0.1891	-0.0641	-0.0016	0.3088	0.0296	9.4
220	1	0.6507	0.6095	0.3595	0.1095	-0.0155	0.0470	-0.6349	0.0158	41.2
220	2	0.6336	0.3617	0.1117	-0.1383	-0.0133	0.0492	-0.6157	0.0179	35.4
220	3	-0.1340	0.1748	-0.0752	0.1748	0.0498	-0.0127	0.1525	0.0185	7.2
221	1	-0.3141	-0.1141	0.1359	-0.1141	0.0109	-0.0516	0.2938	-0.0204	15.4
221	2	-0.0350	0.1447	-0.1053	0.1447	0.0197	-0.0428	0.0235	-0.0116	3.0
221	3	0.1026	-0.1367	0.1133	-0.1367	-0.0117	0.0508	-0.0839	0.0194	5.3

FIG. 14(b)

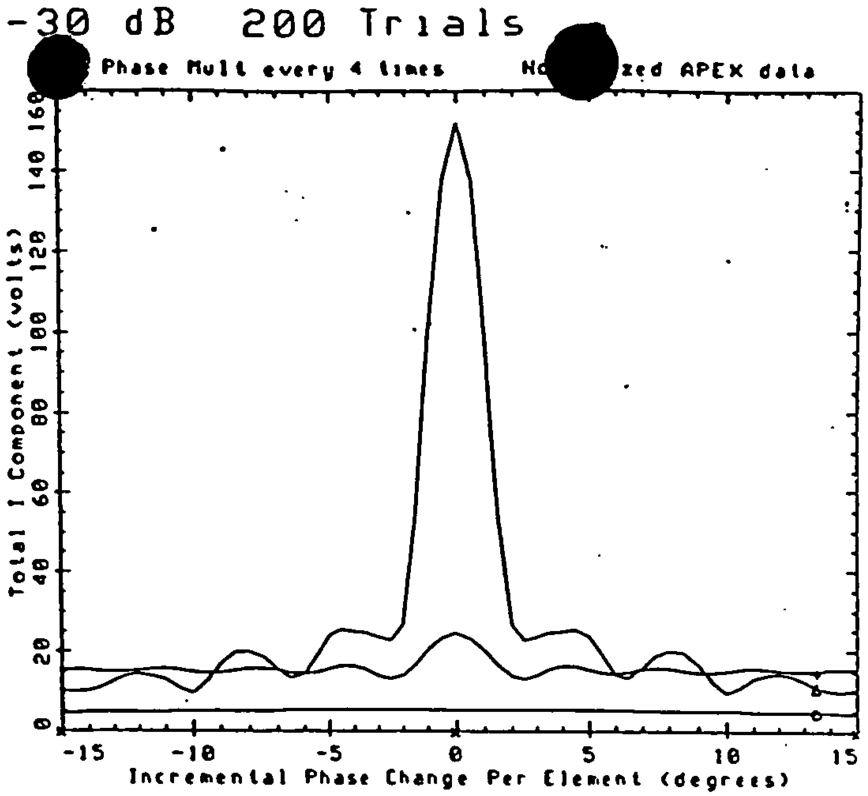


FIG. 15(a)

o 21 Real Elements

Δ Norm APEX Array

+ 210 Real Elements

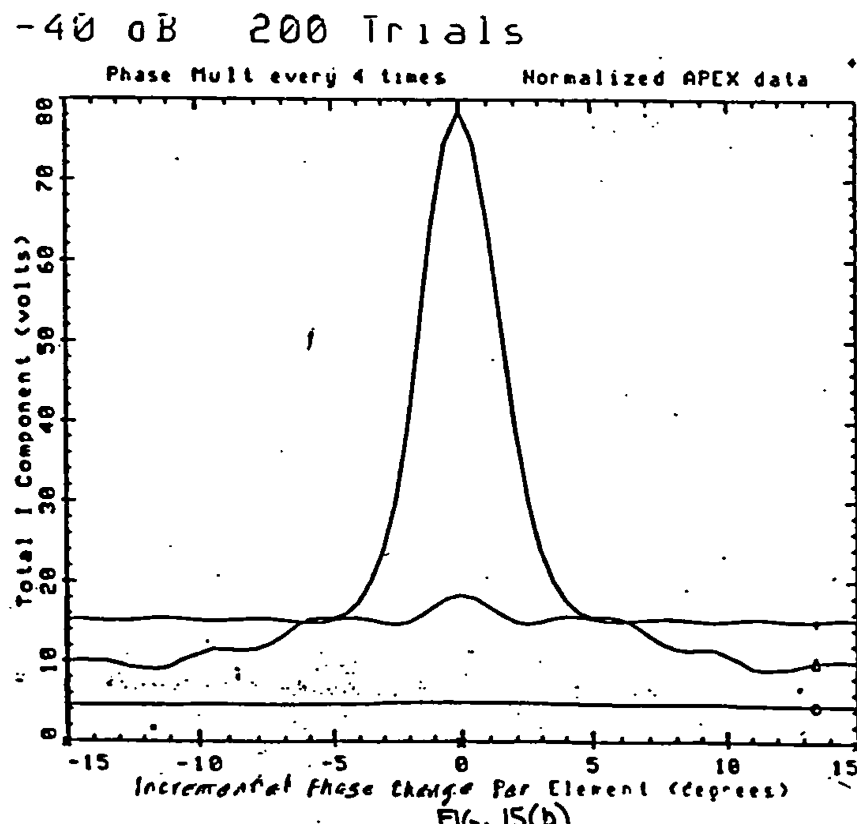
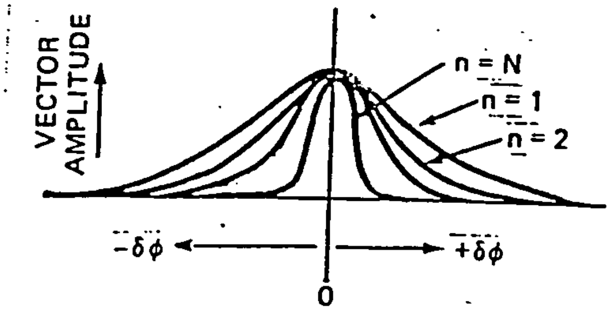


FIG. 15(b)

FIG 15 ILLUSTRATION OF COMPARITIVE IMPROVEMENT



CHANNEL PHASE DISPERSION
AS FUNCTION OF n
FIG. 16(a)

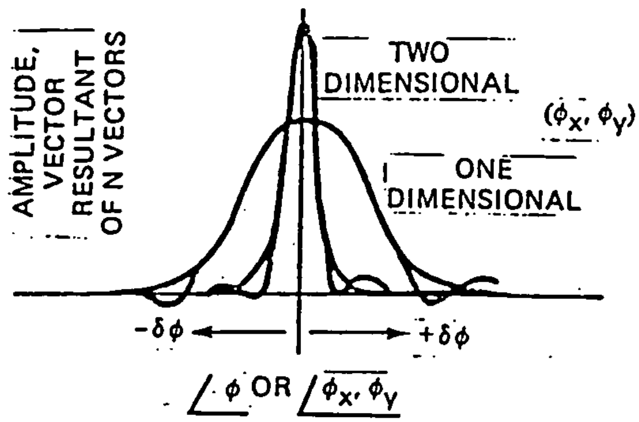
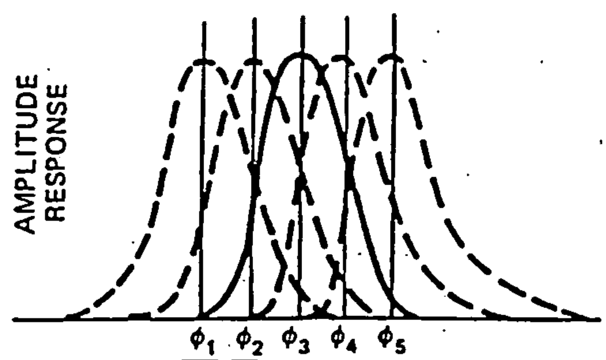


FIG. 16(b)



CONTIGUOUS PHASE GATES
FIG. 16(c)

FIG 16 PHASE GATE OPTIONS